FIG. 1

SERVICE OVERVIEW

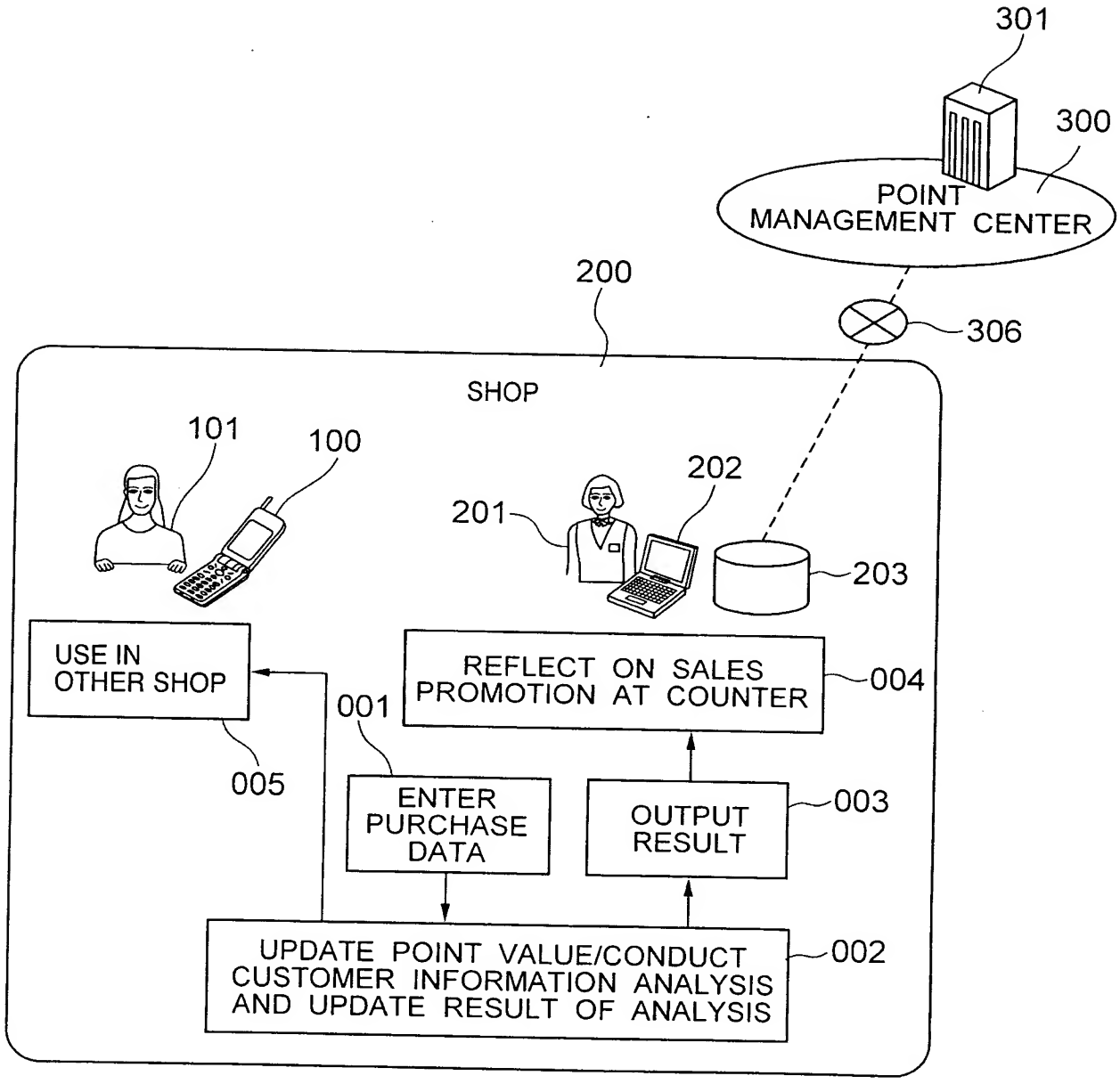


FIG. 2

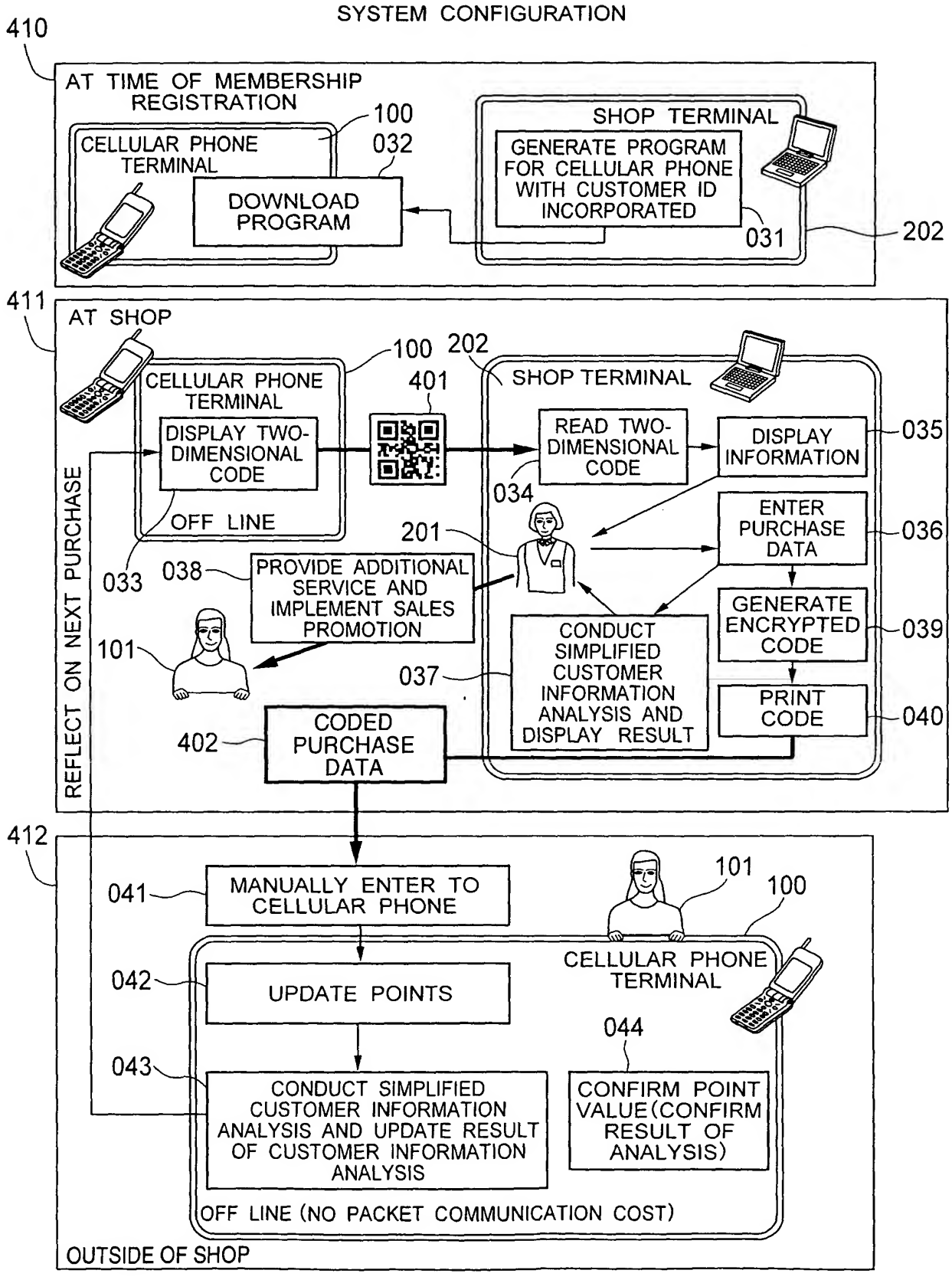

SYSTEM CONFIGURATION
410
AT TIME OF MEMBERSHIP REGISTRATION
100
CELLULAR PHONE TERMINAL
032
DOWNLOAD PROGRAM
SHOP TERMINAL
GENERATE PROGRAM FOR CELLULAR PHONE WITH CUSTOMER ID INCORPORATED
031
202
411
AT SHOP
100
202
CELLULAR PHONE TERMINAL
401
SHOP TERMINAL
DISPLAY TWO-DIMENSIONAL CODE
READ TWO-DIMENSIONAL CODE
DISPLAY INFORMATION
035
034
OFF LINE
201
ENTER PURCHASE DATA
036
033
038
PROVIDE ADDITIONAL SERVICE AND IMPLEMENT SALES PROMOTION
GENERATE ENCRYPTED CODE
039
101
037
CONDUCT SIMPLIFIED CUSTOMER INFORMATION ANALYSIS AND DISPLAY RESULT
PRINT CODE
040
402
CODED PURCHASE DATA
REFLECT ON NEXT PURCHASE
412
041
MANUALLY ENTER TO CELLULAR PHONE
101
100
CELLULAR PHONE TERMINAL
042
UPDATE POINTS
044
043
CONDUCT SIMPLIFIED CUSTOMER INFORMATION ANALYSIS AND UPDATE RESULT OF CUSTOMER INFORMATION ANALYSIS
CONFIRM POINT VALUE (CONFIRM RESULT OF ANALYSIS)
OFF LINE (NO PACKET COMMUNICATION COST)
OUTSIDE OF SHOP

FIG. 3

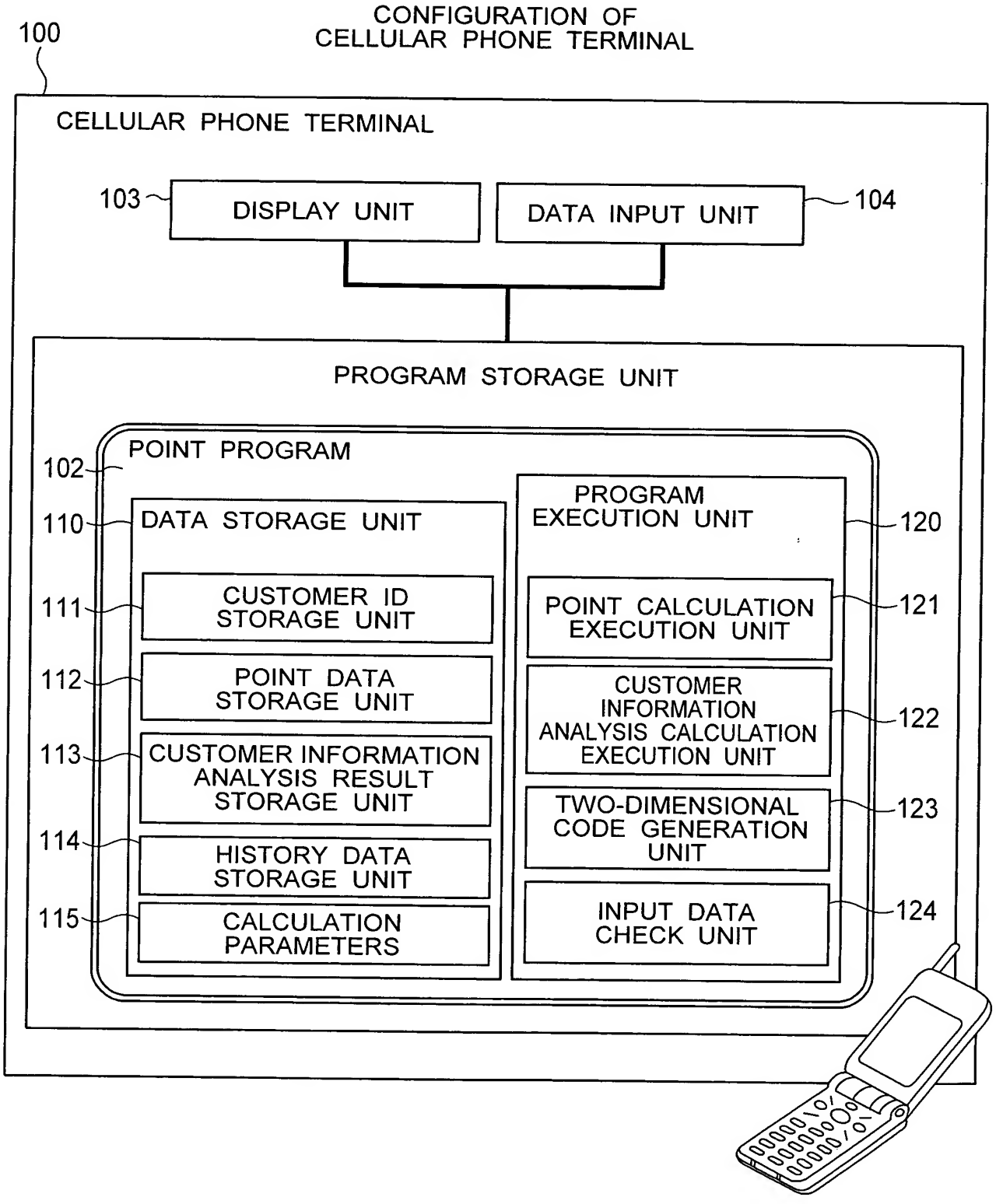

100
CONFIGURATION OF CELLULAR PHONE TERMINAL
CELLULAR PHONE TERMINAL
103
DISPLAY UNIT
DATA INPUT UNIT
104
PROGRAM STORAGE UNIT
POINT PROGRAM
102
DATA STORAGE UNIT
110
CUSTOMER ID STORAGE UNIT
111
POINT DATA STORAGE UNIT
112
CUSTOMER INFORMATION ANALYSIS RESULT STORAGE UNIT
113
HISTORY DATA STORAGE UNIT
114
CALCULATION PARAMETERS
115
PROGRAM EXECUTION UNIT
120
POINT CALCULATION EXECUTION UNIT
121
CUSTOMER INFORMATION ANALYSIS CALCULATION EXECUTION UNIT
122
TWO-DIMENSIONAL CODE GENERATION UNIT
123
INPUT DATA CHECK UNIT
124

FIG. 4

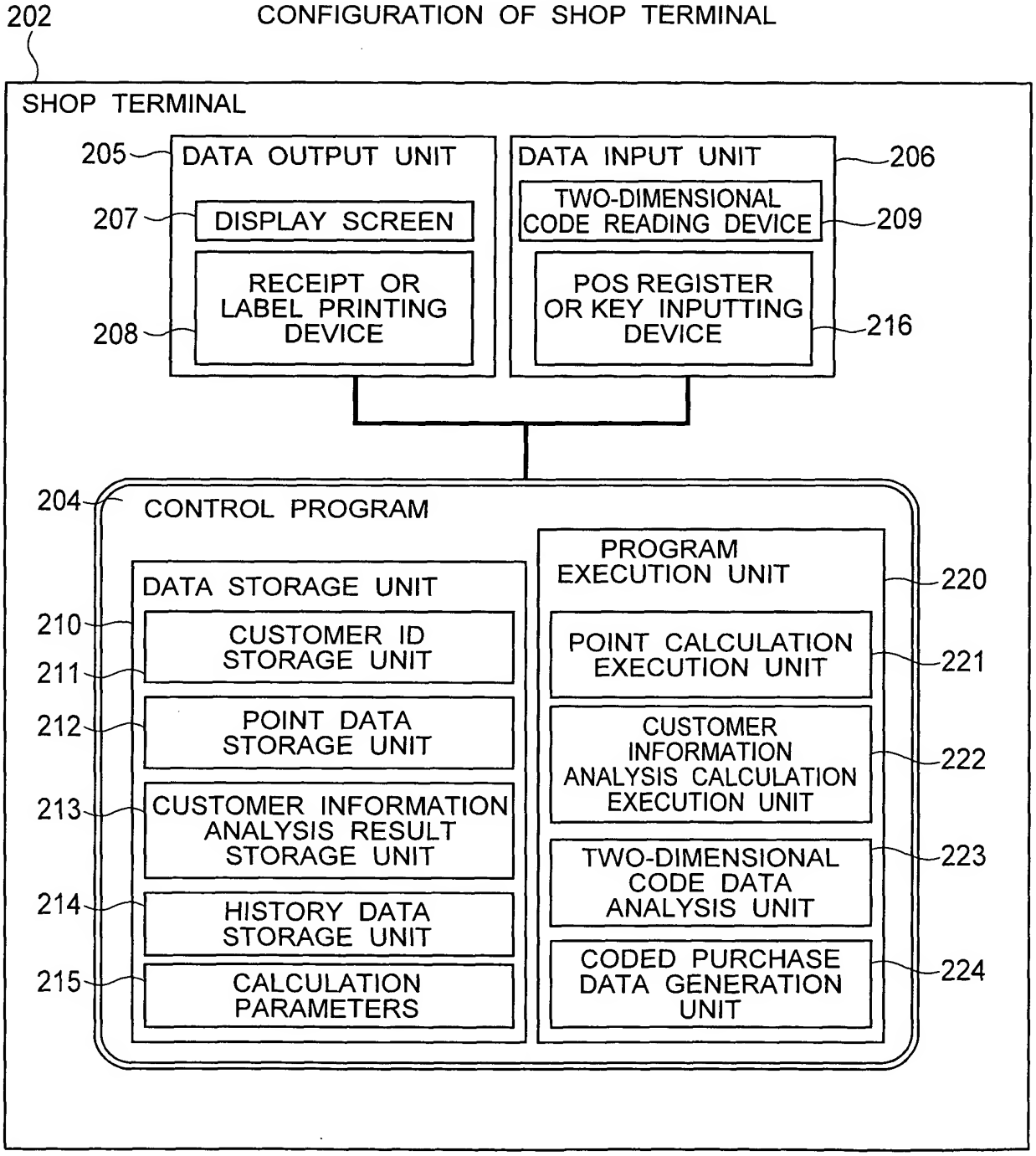

202
CONFIGURATION OF SHOP TERMINAL
SHOP TERMINAL
205
DATA OUTPUT UNIT
207
DISPLAY SCREEN
208
RECEIPT OR LABEL PRINTING DEVICE
DATA INPUT UNIT
206
TWO-DIMENSIONAL CODE READING DEVICE
209
POS REGISTER OR KEY INPUTTING DEVICE
216
204
CONTROL PROGRAM
DATA STORAGE UNIT
210
CUSTOMER ID STORAGE UNIT
211
212
POINT DATA STORAGE UNIT
213
CUSTOMER INFORMATION ANALYSIS RESULT STORAGE UNIT
214
HISTORY DATA STORAGE UNIT
215
CALCULATION PARAMETERS
PROGRAM EXECUTION UNIT
220
POINT CALCULATION EXECUTION UNIT
221
CUSTOMER INFORMATION ANALYSIS CALCULATION EXECUTION UNIT
222
TWO-DIMENSIONAL CODE DATA ANALYSIS UNIT
223
CODED PURCHASE DATA GENERATION UNIT
224

FIG. 5

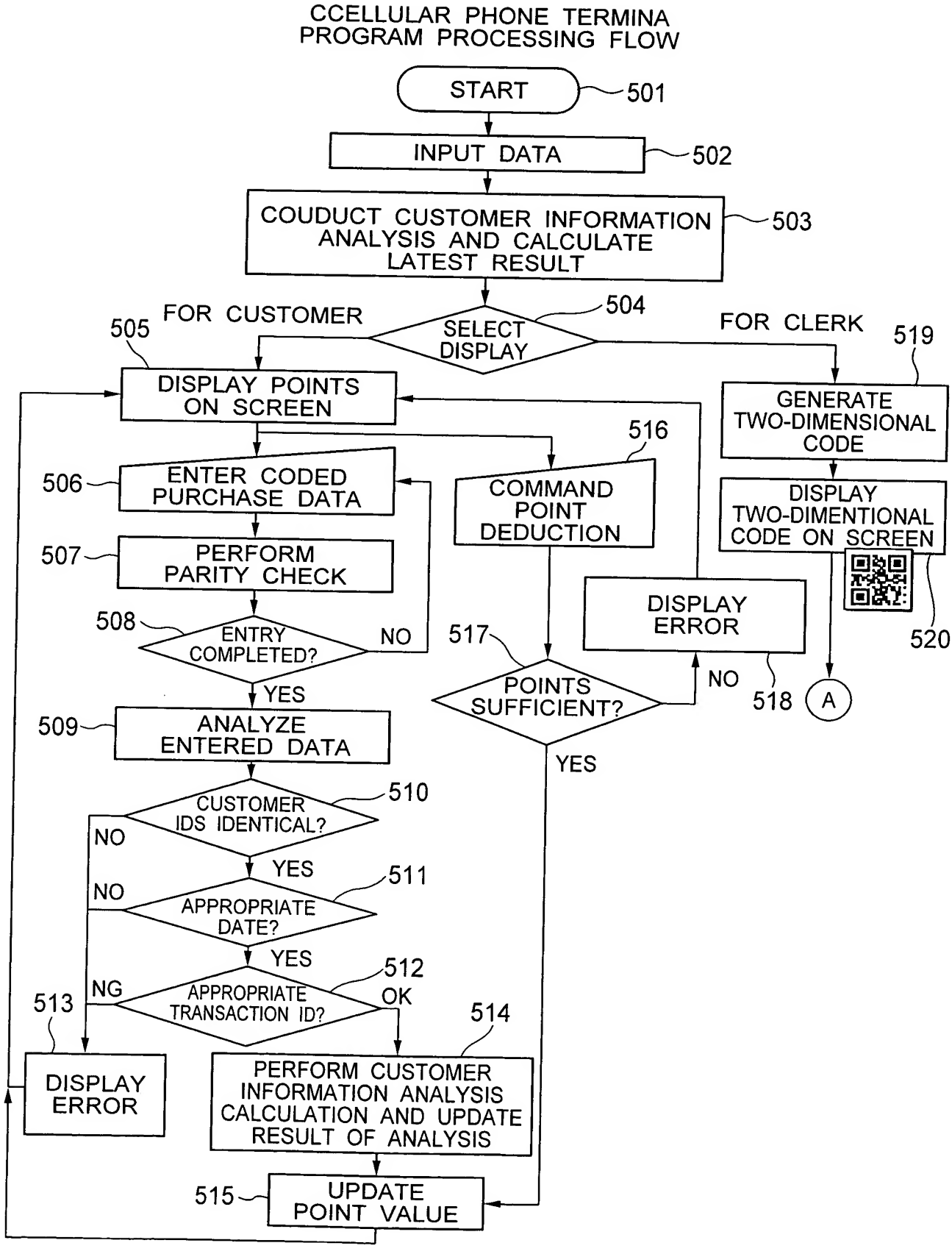

CCELLULAR PHONE TERMINA PROGRAM PROCESSING FLOW
START
501
INPUT DATA
502
COUDUCT CUSTOMER INFORMATION ANALYSIS AND CALCULATE LATEST RESULT
503
SELECT DISPLAY
504
FOR CUSTOMER
505
FOR CLERK
519
DISPLAY POINTS ON SCREEN
ENTER CODED PURCHASE DATA
506
PERFORM PARITY CHECK
507
ENTRY COMPLETED?
508
NO
YES
ANALYZE ENTERED DATA
509
CUSTOMER IDS IDENTICAL?
510
NO
YES
APPROPRIATE DATE?
511
NO
YES
APPROPRIATE TRANSACTION ID?
512
NG
OK
513
DISPLAY ERROR
PERFORM CUSTOMER INFORMATION ANALYSIS CALCULATION AND UPDATE RESULT OF ANALYSIS
514
UPDATE POINT VALUE
515
COMMAND POINT DEDUCTION
516
POINTS SUFFICIENT?
517
NO
YES
DISPLAY ERROR
518
A
GENERATE TWO-DIMENSIONAL CODE
DISPLAY TWO-DIMENTIONAL CODE ON SCREEN
520

FIG. 6

SHOP TERMINAL PROCESSING FLOW

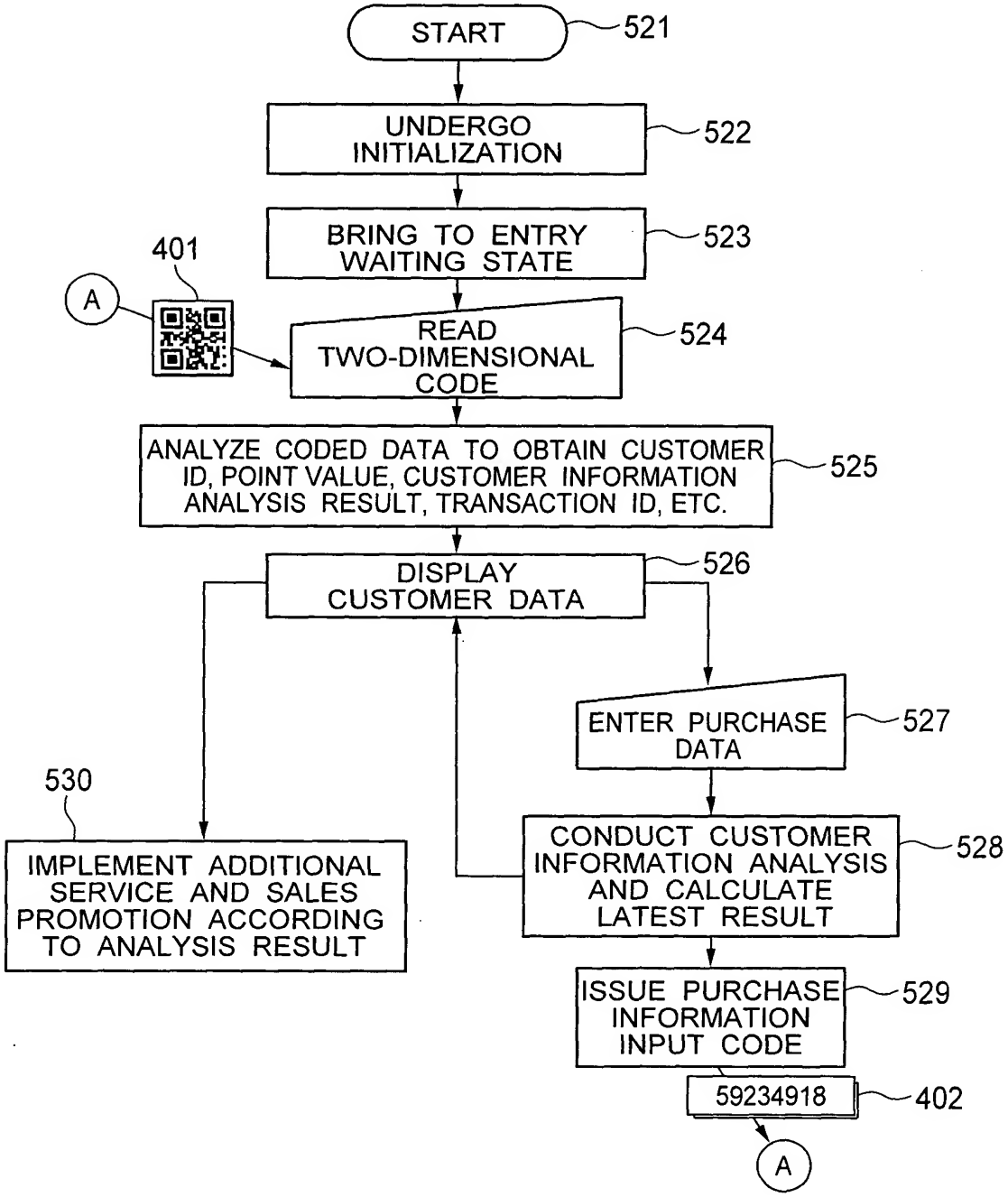


FIG. 7

CELLULAR PHONE TERMINAL PROGRAM PROCESSING FLOW

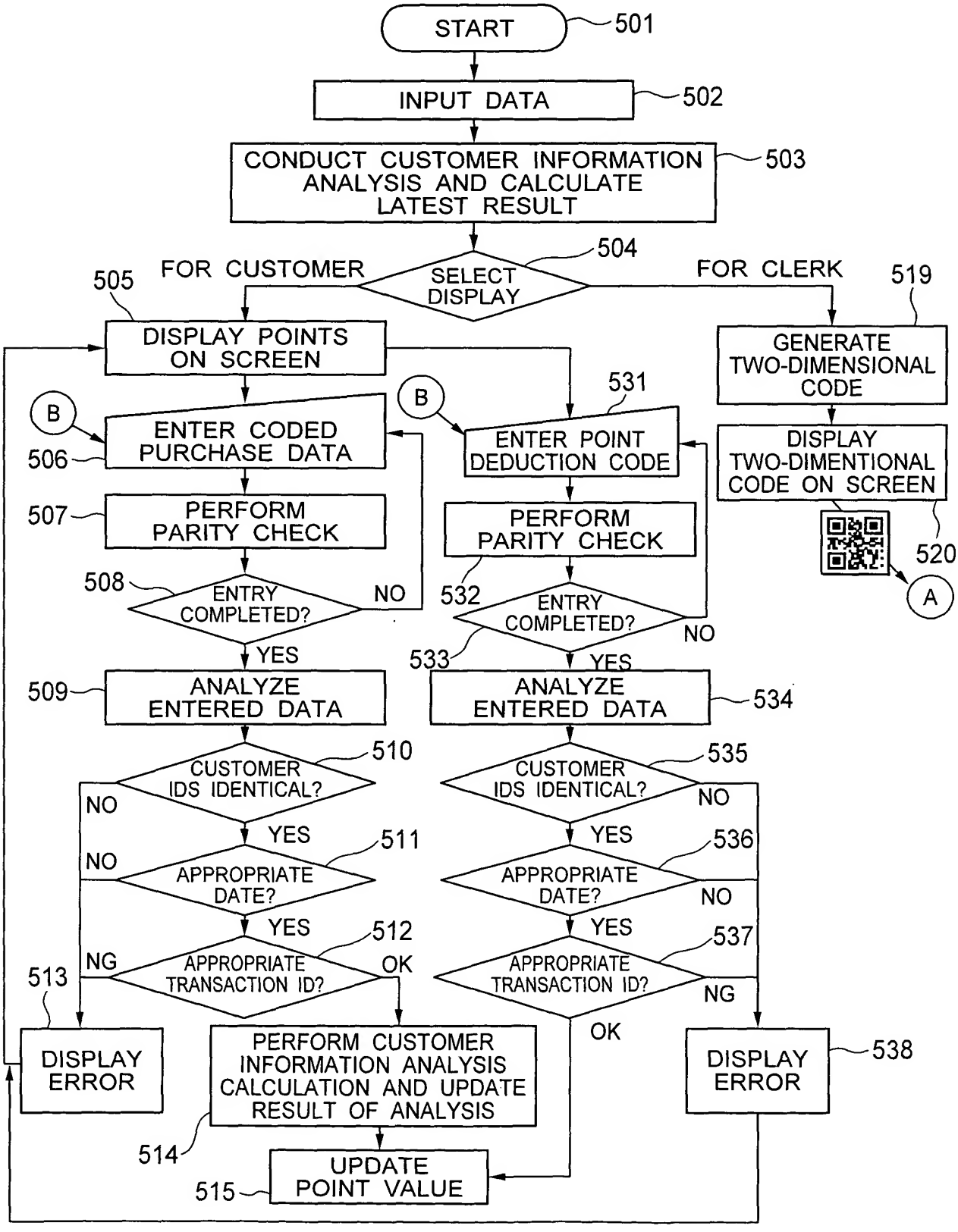


FIG. 8

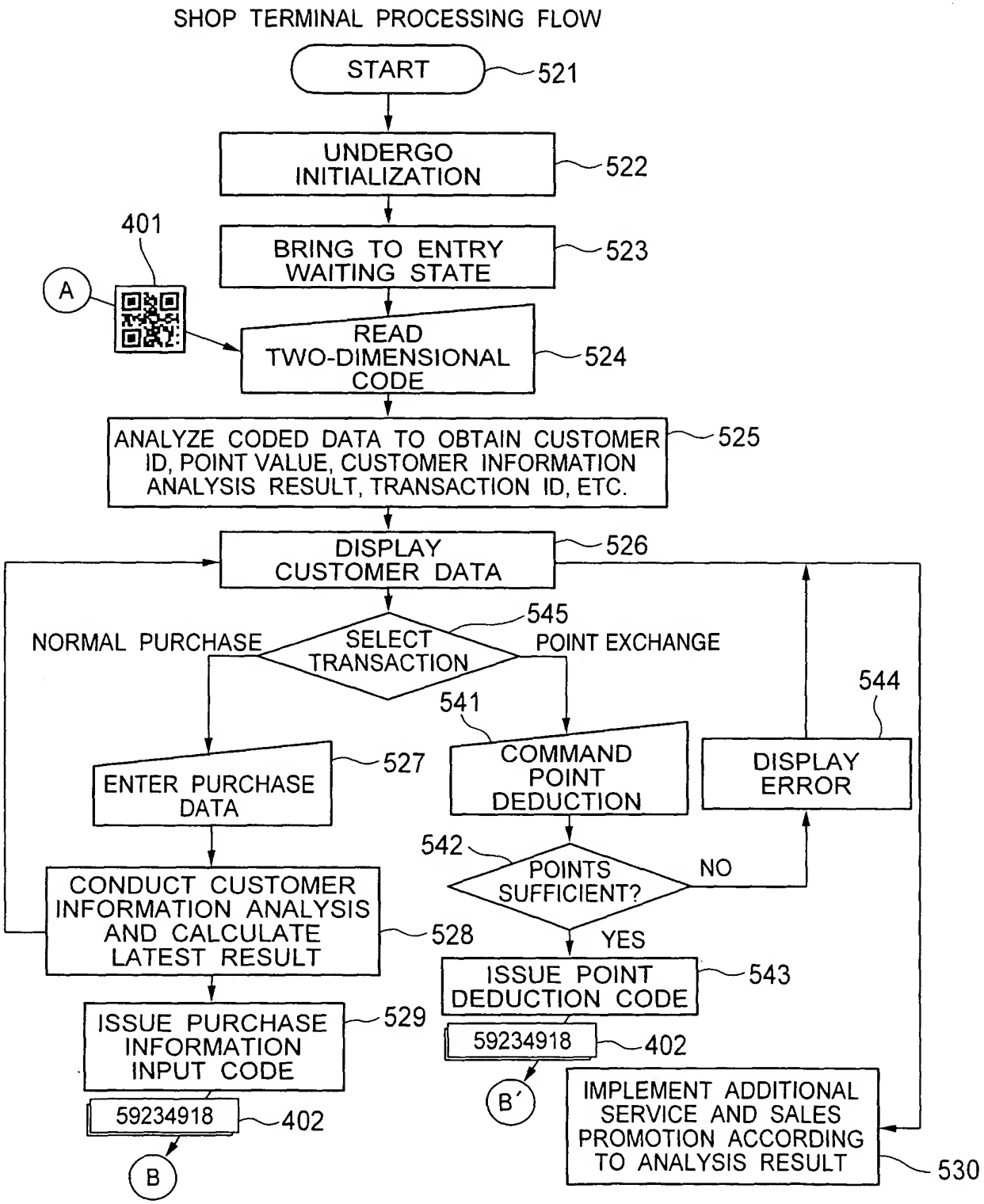
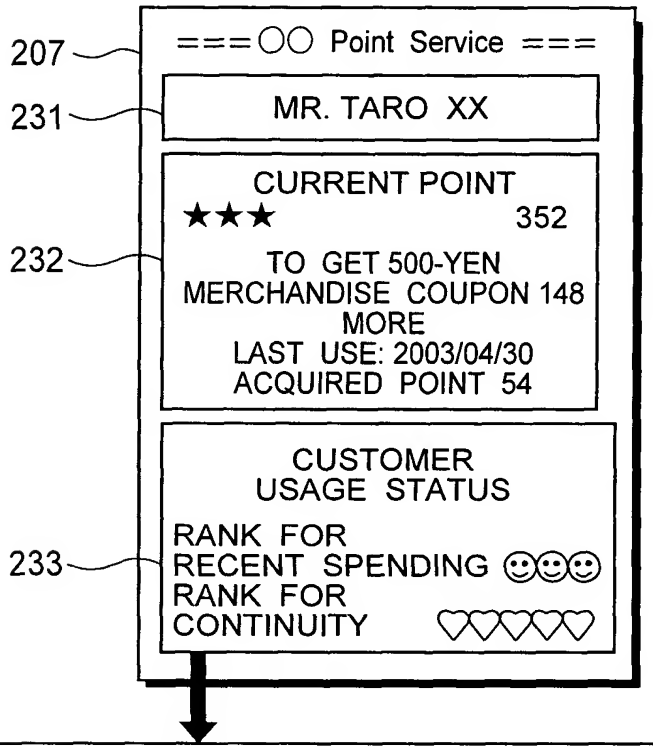

SHOP TERMINAL PROCESSING FLOW
START
521
UNDERGO INITIALIZATION
522
401
BRING TO ENTRY WAITING STATE
523
A
READ TWO-DIMENSIONAL CODE
524
ANALYZE CODED DATA TO OBTAIN CUSTOMER ID, POINT VALUE, CUSTOMER INFORMATION ANALYSIS RESULT, TRANSACTION ID, ETC.
525
DISPLAY CUSTOMER DATA
526
545
NORMAL PURCHASE
SELECT TRANSACTION
POINT EXCHANGE
541
544
ENTER PURCHASE DATA
527
COMMAND POINT DEDUCTION
DISPLAY ERROR
542
POINTS SUFFICIENT?
NO
CONDUCT CUSTOMER INFORMATION ANALYSIS AND CALCULATE LATEST RESULT
528
YES
ISSUE POINT DEDUCTION CODE
543
ISSUE PURCHASE INFORMATION INPUT CODE
529
59234918
402
59234918
402
B
B'
IMPLEMENT ADDITIONAL SERVICE AND SALES PROMOTION ACCORDING TO ANALYSIS RESULT
530

FIG. 9

EXAMPLE OF CELLULAR PHONE TERMINAL SCREEN

CUSTOMER INFORMATION DISPLAY SCREEN FOR CUSTOMER



ANOTHER EXAMPLE OF CUSTOMER INFORMATION ANALYSIS RESULT DISPLAY METHOD

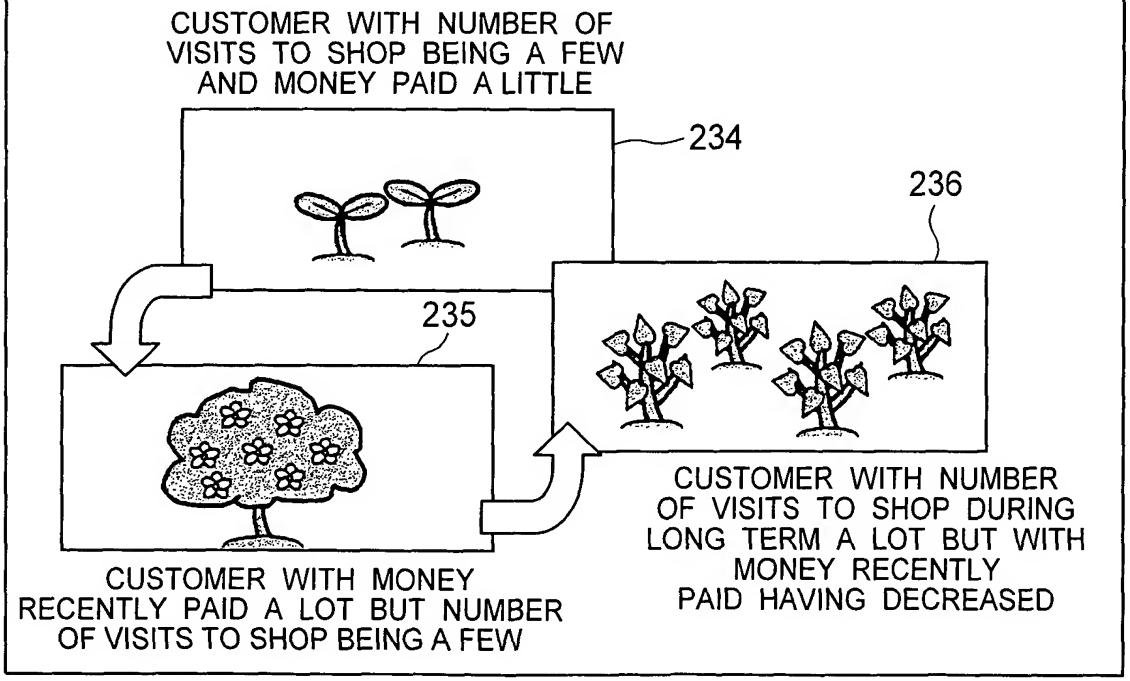


FIG. 10

EXAMPLE OF CELLULAR PHONE TERMINAL SCREEN

CUSTOMER INFORMATION DISPLAY SCREEN: SHOP

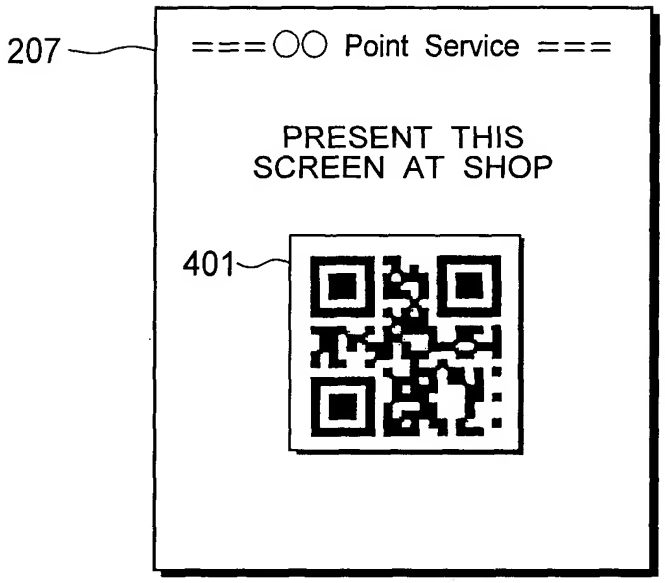


FIG. 11

EXAMPLE OF CELLULAR PHONE TERMINAL SCREEN SCREEN FOR ENTERING PURCHASE DATA

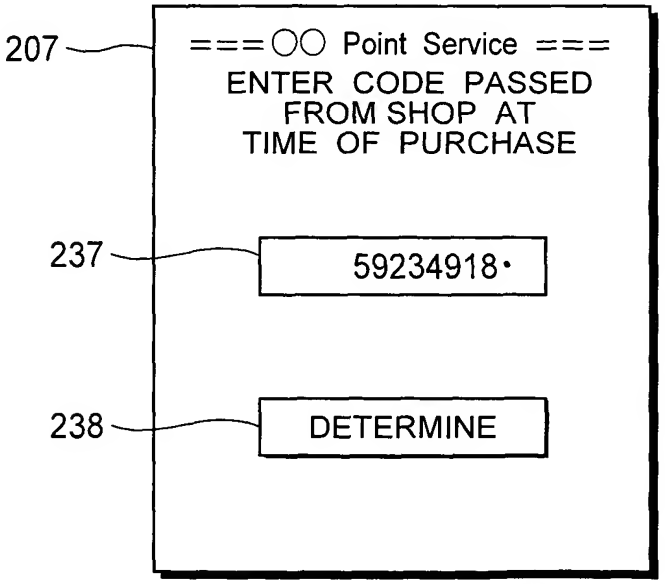


FIG. 12

SYSTEM CONFIGURATION
(USING CELLULAR PHONE WITH CAMERA)

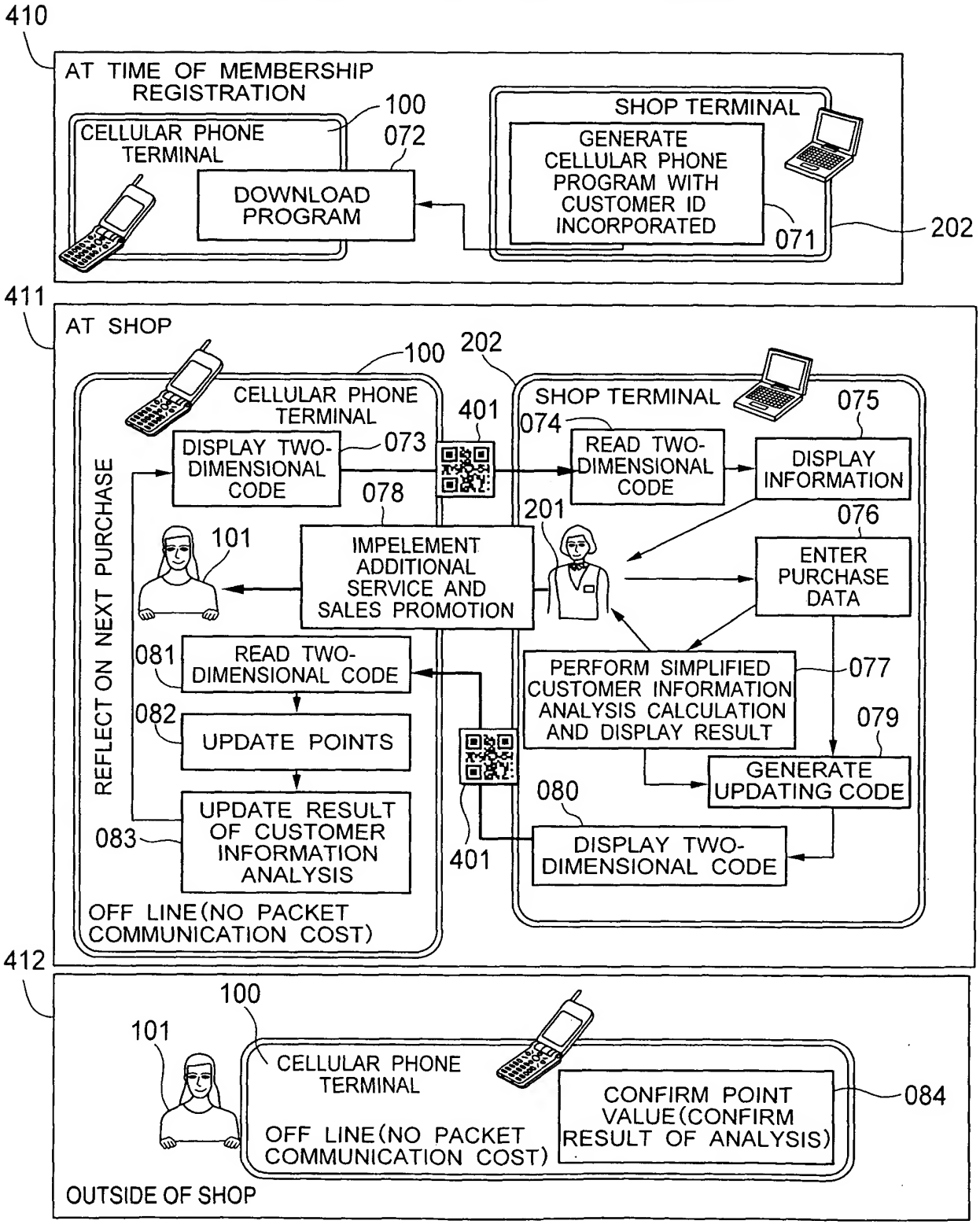


FIG. 13

SSYSTEM CONFIGURATION FOR LOG DATA MANAGEMENT

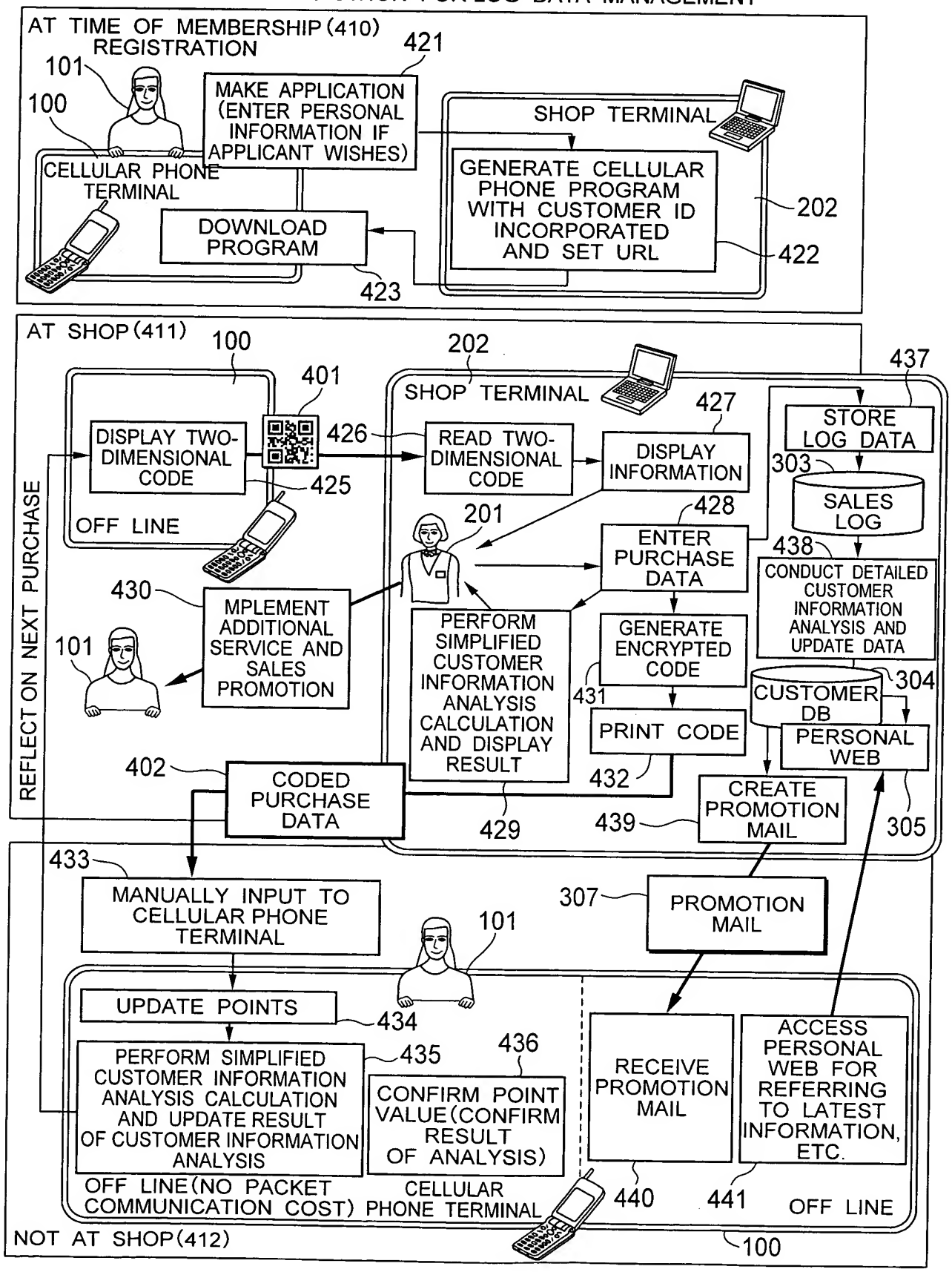
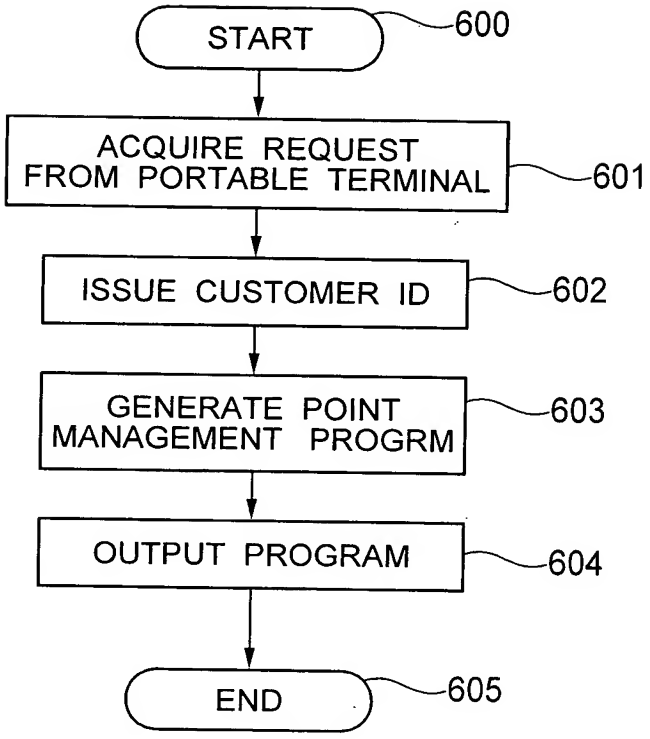


FIG. 14


START
600
ACQUIRE REQUEST FROM PORTABLE TERMINAL
601
ISSUE CUSTOMER ID
602
GENERATE POINT MANAGEMENT PROGRM
603
OUTPUT PROGRAM
604
END
605